

MALACOLOGY.—*Two new Western Atlantic species of pulmonate mollusks of the genus Detracia and two old ones (family Ellobiidae).*¹ J. P. E. MORRISON, U. S. National Museum.

The molluscan genus *Detracia* Gray, 1840, is represented in the Western Atlantic region by four known species. They divide evenly: Two have been previously named; two are new. Two are continental; two are island species in their geographic distribution.

I wish to thank particularly Dr. H. A. Pilsbry and the authorities of the Academy of Natural Sciences of Philadelphia for the opportunity to borrow freely and study all specimens of this genus in the Academy collections. Without such study of many specimens additional to those in the United States National Museum collections, the zoogeographic picture here presented could not have been so complete.

Detracia floridana (Pfeiffer), 1856

Figs. 4, 7

This manuscript name of Shuttleworth was first validly published in Pfeiffer's *Monograph auriculaceorum*, p. 35, no. 35, 1856. W. G. Binney, the first subsequent American author to study the group, unfortunately selected the wrong specimen for figuring in 1859 in his *Terrestrial mollusks of the United States 4*: pl. 75, fig. 30, from the mixture of species brought back from the Florida Keys by Bartlett for his father, Amos Binney. This figure represents the smallest (dwarf) form of *Melampus bidentatus* Say we know from the Florida Keys, instead of *floridana*.

Because every succeeding illustrator of the group has copied this earliest figure of Binney, this species, the only one of the family confined to United States shores, has, up to the present time, almost a century later, not yet been figured! The presence in the literature of an incorrect figure makes the generic confusion that has so long surrounded this species easy to understand.

D. floridana may be easily distinguished by its small size and, even in the youngest individuals seen (1.5 mm long), by the more regularly biconic shape. The aperture is markedly constricted be-

low (anteriorly) by the columellar lamella. There is a single palatal lamella, which is horizontal and approximately equal in height to the columellar. Between these two the palatal wall is well rounded and usually heavily calloused. The parietal wall is usually furnished with about 10 subequal, low lamellae, as in most species of the genus *Melampus*. These minute lamellae are sometimes present posteriorly along almost the full length of the parietal wall. In many young specimens their inner extensions are visible through the translucent penultimate whorl.

The specimens figured (U.S.N.M. no. 473892) are part of a lot collected on August 26, 1938, from the salt marsh at Chesapeake Beach, Calvert County, Md.

The adult (Fig. 7) has 10² whorls and measures: Height 7.9 mm; diameter 4.8 mm; aperture height 5.8 mm; aperture diameter 2.2 mm. The younger individual (Fig. 4) has 11 whorls and measures: Height 6.6 mm; diameter 3.6 mm; aperture height 4.5 mm; aperture diameter 1.9 mm.

D. floridana is entirely continental in geographic distribution. It is recorded only from Delaware and Chesapeake Bays, east and west Florida, and the Gulf coast of Alabama, Mississippi, and Louisiana. The present lack of locality records from the Carolinas and Georgia is probably due to the fact that no collecting has been done in the transitional estuarine (freshwater-brackish-salt) marshes of those coastal areas. In the Chesapeake Bay area, where it is perhaps now best known, it seems to prefer or tolerate a lower degree of salinity in the salt-marsh habitats than does its neighbor and relative *Melampus bidentatus lineatus* Say. Under estuarine conditions this species is sometimes astoundingly abundant. With an observed concentration of more than one individual per square inch, it was estimated on June 28, 1950, that in just 1 square mile of the estuary marshes of the Pocomoke River (Accomack County, Va.) there were twice as many individuals of *Detracia floridana* as there are human beings in the entire world. In other words, more than 4 billion of these small snails inhabit this one particular square mile!

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² Apex eroded. Number of whorls indistinct.

Detracia clarki, n. sp.

Figs. 2, 6

Shell large (for the genus), obovate, smoothish, of 10-12 whorls, with moderate spire somewhat variable in height but usually about one-third the height of the aperture. Body whorl tending to be subcylindrical, smoothly sculptured with minute growth lines only, except for a few incised spiral lines above the shoulder and near the base. Aperture sublinear, conspicuously obstructed by two heavy, upturned (posteriorly dished) axial lamellae, which are continuous from the plane of the aperture to about three-fourths of a whorl within. The columellar, the most prominent of the two, usually extends more than half-way across the aperture to the parietal wall. The outer lip (parietal wall) bears a variable number (a few) of well-spaced lamellae essentially alternating with the axials basally (anteriorly). In addition, the aperture of adults shows a greater number of low parietal lamellae interpolated on an internal ridge or varix along the parietal wall, behind which ridge the parietal lamellae are much reduced in height and prominence.

The holotype U.S.N.M. no. 594588 (Fig. 6), has 11 whorls and measures: Height 12.5 mm; diameter 6.7 mm; aperture height 9.8 mm; aperture diameter 3.2 mm. It and 14 paratypes, U.S.N.M. no. 36062, were collected at Key West, Fla., by Henry Hemphill previous to 1884. It is not absolutely certain that these specimens were taken on Key West, as the older custom was to give general localities only. They may have come from either Stock Island or Boca Chica Key nearby, where it seems evident the species is still living. The younger specimen (Fig. 2) (U.S.N.M. no. 594589) comes from Stock Island, Fla. It has 10 whorls and measures: Height 6.5 mm; diameter 4.0 mm; aperture height 4.7 mm; aperture diameter 2.3 mm.

The geographic distribution as recorded for the 532 specimens at hand includes the Bahamas (?), the Florida Keys, and Cuba, as follows: BAHAMAS: 1 specimen (U.S.N.M. no. 594592) from Great Abaco Island, perhaps drifted to this locality. FLORIDA: "Miami" (S. N. Rhoads, 1899); a key near Chokoloskee; Virginia Key (Biscayne Bay); Pumpkin Key (Card Sound); Middle Key (Barnes Sound); Tavenier Key and Key Largo; from Indian, Lower Matecumbe, Bahia Honda, New Found Harbor, Windley's, Torch, Geiger's, Sugar Loaf, Big Pine, and Boca Chica Keys; Stock

Island; and Key West. An old record of "St. Augustine" is doubtful, except as a possible drift specimen. CUBA: Recorded at present from only two widely separate localities: Punta Cajon, Pinar del Río (U.S.N.M. no. 492571), and Cayo Perro, Cardenas Bay (U.S.N.M. no. 594590). In other words, *Detracia clarki* is at present known only from a restricted area in the Western Atlantic along the Straits of Florida.

Of the size and general shape of *Melampus bidentatus* Say, with which it occurs, and *Pira monile* Bruguière, *D. clarki* is readily distinguished on apertural characteristics. The extra-heavy columellar lamella, higher than the palatal, and by far the most prominent of the aperture, reaching nearly to the parietal wall in some individuals, is turned upward within, to form a cup-shape structure whose rim approaches a parallel to the columellar axis. This extreme constriction of the basal part of the aperture by the columellar lamella will separate it from *Melampus bidentatus*, while the absence of cuticular setae or the remaining scar-pits of the same on the spire will easily separate it from *Pira monile*. *D. clarki* is distinct from all others by the conspicuously posteriorly dished or upcurved direction of the columellar lamella. It is twice the size, when adult, of any other known member of the genus *Detracia*.

This species is named in honor of Austin H. Clark, retiring curator of echinoderms of the United States National Museum, in some small recognition of his outstanding faculty for inspiring others in the solution of problems of the zoogeography of invertebrate animals of all types from every corner of the world.

Detracia bullaoides (Montagu), 1808

Figs. 1, 5

This the genotype species was first described from shells recovered from ballast discarded along the coast of England. For many years, however, it has been well known as a characteristic species of the West Indies. It is figured here to complete the picture of West Atlantic forms, so that future students will not have to search elsewhere for comparable illustrations.

D. bullaoides is easily distinguished by the more elongate shape of most adults, as well as by the heavily buttressed palatal lamella. The few low parietal lamellae are present only on the basal (anterior) portion of the parietal or outer

wall of the aperture. In most adult shells the aperture is posteriorly exceedingly narrow and linear.

The adult specimen, U.S.N.M. no. 466289 (Fig. 5), has 12 whorls and measures: Height 9.5 mm; diameter 4.3 mm; aperture height 5.6 mm; aperture diameter 2.2 mm. It is one of many specimens collected on the edge of the mangrove swamp on Shell Key, off St. Petersburg, Fla., April 24, 1936. The younger specimen (Fig. 1) has 10 whorls and measures: Height 6.2 mm; diameter 3.2 mm; aperture height 4.3 mm; aperture diameter 2.0 mm. It comes from the same lot.

D. bullaoides is apparently primarily Greater Antillean in its geographic range. The United States National Museum collections include specimens from the Bermudas; from Fernandina to Key West and to Cedar Keys, Fla.; the Bahamas; Cuba; Jamaica; and Hispaniola. There are also records of this species in the collections of the Academy of Natural Sciences of Philadelphia from St. Croix, Virgin Islands; and Tampico, Mexico.

Detracia parana, n. sp.

Fig. 3

Shell small, obovate-biconic, smooth, of about 10 whorls. Spire moderate, equal to about one-fourth the total length of the shell. Body whorl well rounded, smoothly sculptured with minute growth lines only, with the very low, rounded shoulder about midway of the shell height. Aperture moderately narrow, constricted by a prominent horizontal or downwardly (anteriorly) directed columellar lamella, which extends forward to be continuous with the base of the outer lip. The palatal wall is furnished with a single low horizontal lamella a little below the middle of the aperture. This is inconspicuous and in specimens seen extends only about one-fourth of the way to the parietal wall. The parietal wall is not furnished with lamellae but appears smooth.

The holotype, U.S.N.M. no. 594591 (Fig. 3), and three paratypes, U.S.N.M. no. 32090, were collected from the Amazon River at Pará, Brazil, by J. B. Steere, previous to 1885, when they were catalogued at the United States National



FIGS. 1, 5.—*Detracia bullaoides* (Montagu), young and adult, U.S.N.M. no. 466289, from margin of mangroves on Shell Key, off St. Petersburg, Fla., April 24, 1936, J. P. E. Morrison.

FIG. 2.—*Detracia clarki*, n. sp., young paratype, U.S.N.M. No. 594589, from Stock Island, Fla., P. Bartsch.

FIG. 3.—*Detracia parana*, n. sp., holotype, U.S.N.M. no. 594591, from the Amazon River, Pará, Brazil, J. B. Steere.

FIGS. 4, 7.—*Detracia floridana* (Pfeiffer), young and adult, U.S.N.M. no. 473892, around grass roots in salt marsh at Chesapeake Beach, Md., August 26, 1938, J. P. E. Morrison.

FIG. 6.—*Detracia clarki*, n. sp., holotype, U.S.N.M. no. 594588, Key West, Fla., H. Hemphill.

Museum. The holotype has 10^3 whorls and measures: Height 6.8 mm; diameter 3.9 mm; aperture height 5.2 mm; aperture diameter 2.0 mm.

This new species is almost exactly like the North American continental species *floridana* in general appearance but differs considerably in the detail of lamination of the aperture. It lacks any marked callosity of the aperture above the columellar lamella. The columellar wall below

³ Apex eroded. Number of whorls indistinct.

MALACOLOGY.—*A new species of glycymerid from the Philippines.*¹ DAVID NICOL, U. S. National Museum.

This is a report on a new species of glycymerid collected by the U. S. Fish Commission steamer *Albatross* on the Philippine expedition of the years 1907 to 1910. It is my intention to give a complete account of the Glycymeridae of this collection at a later date.

Genus *Axinactis* Möreh, 1861

Genotype (subsequent designation by Hertlein and Strong, 1943, p. 153): *Pectunculus inaequalis* G. B. Sowerby, 1833; Recent; Pacific coast of Panama and Nicaragua.

Axinactis is the earliest generic name available for the raised-ribbed species of glycymerids, which are nearly always confined to warm waters. This large group of glycymerids has had an independent history as far back as Oligocene time and is certainly not closely related to *Glycymeris glycymeris* (Linné).

Subgenus *Melaxinaea* Iredale, 1930

Genotype (original designation): *Melaxinaea labyrinthica* Iredale, 1930; Recent; Albany Passage, Queensland, 9–12 fathoms.

Axinactis (*Melaxinaea*) *clarki* Nicol, n. sp.

Figs. 1–3

Description.—Valves compressed, ratio of convexity to height about 0.50; dorsal margin long and straight giving shell an eared appearance, anterior, ventral, and posterior margins rounded; light reddish-brown spots on ribs, interior usually colorless, occasionally reddish-brown spots on

(anterior to) the palatal lamella is rather flat, not markedly arched and calloused in this region as it is in *floridana*. Though the number of specimens of *parana* at hand is very small, the observed differences, together with the observed similarities, of a molluscan species purporting to come from an absolutely comparable estuarine habitat on South American West Atlantic shores lead me to advance *Detracia parana* as a species that has developed completely parallel to its close relative *D. floridana* of North America.

margins; beaks contiguous, orthogyrate; umbos flat and inconspicuous, located approximately at center of dorsal margin; ligament narrow and elongate, made up of four or five chevron-shaped parts; hinge teeth 23 to 28 in number, averaging 25, arranged in a broad arch on a large flat hinge plate, teeth tending to disappear at center of hinge plate in mature specimens; crenulations on interior ventral border well-marked, usually pointed at end, though sometimes rounded, depressed at center, 15 to 21 in number, averaging 17, not divided as is common in some species of *Melaxinaea*; adductor muscle scars approximately equal in size; radial ribs raised but not prominent, 24 to 28 in number, averaging 26, ribs on central part of shell flat-topped, often with a shallow central groove, occasionally with two or three small ridges; at either end of shell ribs split into fine, slightly nodulose, crooked, riblets, occasionally a small radial rib added in interspaces, the latter almost as wide as ribs at ventral margin; ribs and interspaces crossed by fine, closely spaced, concentric striae which are more prominent on interspaces.

Measurements in mm

Specimen	Length	Height	Convexity of both valves
Holotype 236879	34.6	34.0	18.1
Paratype 293039	20.6	20.0	10.0
Paratype 293039a	17.0	16.8	8.0
Paratype 293039b	17.0	16.6	8.4
Paratype 293039c	16.4	16.4	8.6
Paratype 293039d	15.9	15.8	7.8
Paratype 293039e	15.0	14.4	7.8
Paratype 293039f	15.4	15.4	7.6
Paratype 293039g	11.6	12.3	6.4

Type specimens.—The holotype and paratypes are in the collection of the U. S. National Museum, Division of Mollusks: Holotype no. 236879, paratypes nos. 293039 and 296058. Thirty-nine

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